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THE CONSTRUCTION OF A SCALE TO MEASURE ADULT ATTITUDE TOWARD THE ALBERTA EDUCATIONAL SYSTEM

by

ARTHUR KITCHENER BRIMACOMBE
EDMONTON, ALBERTA.
September, 1957.

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THE CONSTRUCTION OF A SCALE TO MEASURE ADULT ATTITUDE TOWARD THE ALBERTA EDUCATIONAL SYSTEM

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TO THE COMMITTEE ON GRADUATE STUDIES
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BY
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The undersigned hereby certify that they have read and do recommend to the Committee on Graduate Studies for acceptance, a thesis entitled, "What Do Albertans Think of Their Schools?" submitted by Arthur Kitchener Brimacombe, B. Sc., B. Ed., in partial fulfilment of the requirements for the degree of Master of Education.

Professor

Professor

Professor

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CHAPTER I

THE PROBLEM

The Construction of a Scale to Measure Adult Attitude Toward the Alberta Educational System

In 1952 Canada spent $432,000,000 for elementary and secondary education. Alberta's contribution to this amount was $35,715,000.[1] The educational system in Alberta involves 200,000 pupils, over 7,400[2] teachers, 54 superintendents, several high school inspectors, a large government department and school trustees representing school boards from every area of the province. Every gainfully employed citizen in one way or another helps finance our schools. Are we spending too much? Do the schools teach what our citizens want taught? What do Albertans think of their schools?

If the attitude of the public toward education could be determined, these and many other questions could be answered. The problems of financing education, providing adequately trained teachers for our classrooms, determining course content and methods of instruction, depend largely upon public opinion of the services rendered. If education were generally held in high esteem, more attention might be given to the solution of the above mentioned problems.

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[1] M. E. Lazerte, School Finance In Canada (Edmonton: Hamly Press, 1955), Table 53, p. 138.

[2] Alberta Department of Education Forty-ninth Annual Report, 1954, Table 19, p. 137.

The Importance and Variability of Attitudes

An attitude is an enduring acquired predisposition to react in a characteristic way, usually favorably or unfavorably, toward a given type of person, object, situation or idea. Favorable attitudes are necessary for the maintenance and improvement of our institutions. It is, therefore, important that we know more about the nature and formation of attitudes and their measurement.

Attitude scales and opinion surveys resemble each other in that they both gather data from the public. They differ, however, in marked ways. Opinion surveys deal with miscellaneous matters, asking only one question on each topic. They are usually conducted by means of an interview. Less emphasis is placed on the reliable measurement of the opinion of an individual[3] than on the obtaining of a general consensus. Attitude scales on the other hand concentrate on one issue and attempt to establish the reliability of the data gathered. They are practically always written tests.

We cannot expect the public to hold common and unitary attitudes. Different racial and cultural backgrounds develop different outlooks. Varying religious doctrines and training cause differences in opinion, and hence attitude. There are beliefs which are common to urban populations in contrast to those held by rural dwellers. The social and economic status of individuals color their attitudes. Different levels of education

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[3] H. H. Remmers, Introduction to Opinion and Attitude Measurement (New York: Harper and Brothers, 1954), p. 15; A. R. Mead, "Research About Attitudes," Journal of Educational Research, XLVIII (November, 1954), p. 233.

and intelligence of a society yield varying degrees of insight into our educational problems. Whether or not the groups considered are classified as inferior or superior, they will each adhere to their own opinions and beliefs which are in reality a reflection of their attitudes. In a young province such as Alberta, where there is a drift from rural to urban living and where individuals change their socio-economic status quite readily, attitudes could be expected to be transitory and different from one "public" to another and within the same group at different times. The product of any survey of attitudes may, therefore, possess only transitory validity.

However attitudes may change and however transitory they may be, it is necessary that we include them in our thinking about existing social institutions. It is also necessary that we measure public attitudes frequently and be aware of their nature, intensity, and change.

The Historical Background Of Attitude Testing

The scientific measurement of human behavior with respect to educational attainments by school children can be roughly divided into three stages: oral questioning, still used under certain conditions, was formerly the only means of testing progress. About 1845, the Boston school system instituted written examinations which greatly impressed Horace Mann.[4] He advocated the use of a large number of questions and

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[4] H. A. Green, A. H. Jorgenson and J. R. Gerberich, Measurement and Evaluation In the Elementary School, (New York: Longmans Green and Company, 1945), p. 40.

commented on the desirability of standardization. In 1894 the scientific testing movement received considerable impetus from Dr. J. M. Rice,[5] who started experimenting in the instruction and measurement of attainment in spelling. In 1897 his findings shocked the educators of his day. It was not until some ten years later that his pioneering resulted in significant attention to the objective method in educational testing. The first book dealing directly with measurement was published by Thorndike in 1904.[6] Other standardized measures followed shortly afterwards in the field of arithmetic (1908)[7] and handwriting (1910).[8] The measurement of intelligence had already received some attention from Alfred Binet,[9] a French psychologist. When the schools of Paris decided to segregate the less promising pupils from the rest of the students, the officials asked Binet to produce a practical mental test for the purpose. In collaboration with Simon, a French physician, he published a scale to measure intelligence in 1905. Revisions followed in 1908 and 1911. The scale was modified in the United States of America by Lewis Terman[10] at Stanford University. Many other intelligence scales were developed after this time.

Interest tests made their debut much later, in 1927, when Strong[11] first published the Strong Vocational Interest Blank. This was followed

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[5] _Ibid._, p. 41

[6] W. S. Munroe, _Encyclopedia of Educational Research_ (revised edition; New York: The Macmillan Company, 1950), p. 1461.

[7] _Ibid._

[8] _Ibid._

[9] L. J. Cronbach, _Essentials of Psychological Testing_ (New York: Harper and Brothers, 1949).

[10] _Ibid._

[11] _Ibid._, pp. 339-40.

shortly afterwards by the Kuder Preference Record.

Attitude testing commenced at a still later date. The pioneer work in attitude testing in the business world was attempted during the decade 1920 to 1930. From a list of some twenty-three[12] workers in this field, the name of J. David Hauser deserves mention. He was the first to employ large scale attitude surveys of attitudes of employees and consumers for department stores, public utilities and a great variety of business organizations. The outstanding developments of this early period were:

1. The use of formal standardized questionnaires.
2. The reliance on personal face to face interviews.
3. The use of large randomly selected and stratified samples of respondents.

Dr. Daniel Starch of Harvard University was the first psychologist to open an office in New York (1926) devoted entirely to market research. During the same period L. L. Thurstone[13] was developing his attitude scaling techniques.

Intensive attitude research began in the decade 1930 to 1940. In a review of the literature of Opinion-Attitude Methodology by McNemar[14] only five of 133 titles of research mentioned were dated between 1920 and

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[12] Henry C. Link, "Some Milestones in Public Opinion Research," Journal of Applied Psychology, XXXI (June, 1947), p. 225.

[13] Ibid., p. 226

[14] Quinn McNemar, "Opinion-Attitude Methodology," Psychological Bulletin, XLIII (July, 1946), pp. 369-374.

1929; forty were dated between 1930 and 1939; and ninety-eight between 1940 and 1946. In 1932 fifteen psychologists associated with the Psychological Corporation conducted an attitude survey in fifteen cities and towns by personal interview.

The first application of statistics to a poll of consumer reaction was made in 1934. The work was done under the direction of Dr. Irving Lorge of Teachers College and Philip G. Corby of the Psychological Corporation staff.[15] Predictions of error based on the mathematical theory of Bernoulli, Mills, Pearson and Fisher[16] were verified by dividing 5,165 Hollerith cards into fifty-one samples of one hundred cards each and comparing results.

The Literary Digest poll on the presidential election of 1936 proved conclusively that large samples are not necessarily accurate. They predicted 43% of the vote for Roosevelt, whereas he actually received 60.7%. This prediction was based on a sample of 2,376,523 persons.[17] The Fortune Magazine Poll, on the other hand, on a sample of 3,500 individuals, predicted 61.7% as compared with the actual 60.7%. The Archibald Crossley Poll and the American Institute of Public Opinion under the direction of Dr. George Gallup both predicted 53.8% in the same election. Shortly after 1935 Elmo Roper assumed complete direction of the Fortune Magazine Poll. He is also responsible for a number of important studies in attitude testing, the most significant ones being:[18]

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[15] Link, _op_. _cit_., p. 228.

[16] _Ibid_., p. 229.

[17] _Ibid_.

[18] _Ibid_., p. 231.

1. People's knowledge of the subject matter on which they are being questioned.
2. The development of sampling methods.
3. Interviewer bias.

Another man noted for his work on the polling of experts is Dr. Arthur Kornhauser. The most recent development in attitude measurement occurred in 1941 when the National Opinion Research Center, financed by the Field Foundation, Incorporated, was established at the University of Denver.

Attitude Testing

Attitudes may be polled in a variety of ways. The responses to an individual question may be gathered from several persons representative of a district or community, or an economic, social or cultural group. Crespi[19] demonstrated the validity of "single question" tests. The opinions may be gathered by a personal interview or by questionnaire. There are two main kinds of questionnaires used for this purpose. One was devised by Thurstone in 1928 and the other by Likert in 1932.

The methods of constructing the two scales are as follows:

The Thurstone Scale

1. Attitudes are thought of as a continuum measured on a scale of

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[19] Leo P. Crespi, "Opinion-Attitude Methodology and Polls-A Rejoiner," Psychological Bulletin, XLIII (1946) pp. 565-6.

[20] Cronbach, op. cit., pp. 369-72.

numbers from 0.0 to 11.0 with 0.0 unfavorable and 11.0 as favorable.

2. Approximately twenty statements representing all degrees of opinion are collected from various sources.
3. These statements are printed on cards and sorted into eleven piles by fifty or more judges and a medium value assigned to each statement.
4. The items are arranged in steps of ascending order of favorableness.
5. The scale is printed and reliability and validity are determined.

The Likert Scale

1. Eighteen to 200 items consisting of statements definitely favorable or unfavorable to the object of the scale are assembled.
2. The respondent selects one of five possible answers, SA, A, U, D, SD, meaning 'strongly agree,' 'agree,' 'undecided,' 'disagree,' 'strongly disagree,' which are scored from five for the most favorable response to one for the most unfavorable reaction.
3. The scale is given a preliminary administration.
4. An item analysis is made with item score versus total score, and poorly correlated items are discarded. A product-moment correlation or bi-serial r is most commonly used for this purpose.

The Thurstone and Likert scales correlate highly (.92).[21] The Likert is more sensitive in that degrees of feeling toward an item can

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[21] *Ibid.*, p. 373.

be recorded on a five point scale. The Likert is also easier to prepare, less time consuming, and does not require as many judges to rank the items. Likert scales show slightly higher reliability coefficients with fewer items than scales constructed by the Thurstone method. The important problem is whether or not scores obtained from the two differently constructed scales are comparable. The evidence at hand indicates that they are.[22]

Carey and La Piere[23] found that professed attitude and performance may be very different. It would appear that tests are most likely to be valid when the subject has no motive for concealing his attitude. It has also been found that objects toward which there is no "right" or "wrong" behavior are answered more truthfully than objects involving prestige and group approval.[24] While attitude tests have been criticized, principally by McNemar,[25] with respect to validity, reliability, and stability of the attitude tested, they have been equally well defended by Fehrer,[26] Edwards and Kenny,[27] and Crespi.[28]

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[22] A. L. Edwards and K. C. Kenny, "A Comparison of Thurstone and Likert Techniques of Attitude Scale Construction," Journal of Applied Psychology, XXX (1946), p. 83.

[23] Cronbach, op. cit., p. 377.

[24] Ibid.

[25] McNemar, op. cit., p. 296.

[26] Elizabeth Fehrer, "Shifts in Scale Values of Attitude Statements as a Function of the Composition of the Scale," Journal of Experimental Psychology, XLIV (September, 1952), pp. 179-88.

[27] Edwards and Kenny, op. cit., p. 83.

[28] Crespi, op. cit., pp. 565-6.

Successful businesses measure the various factors influencing production and the attitudes of people towards their goods or services. Successful educational systems must continually measure their products and public attitude towards their goods and services.

Purpose Of The Study

The main purpose of this study is to provide data for the construction of a scale to measure adult attitude toward the Alberta educational system. This will include the validation of items and components forming the scale.

CHAPTER II

RELATED STUDIES

Early Studies

The literature available shows few studies of attitude toward education. Five have appeared since 1937, four of them in the last thirteen years. A doctoral thesis on "The Attitudes and Opinions of California High School Seniors Toward Current Social Issues," was completed in 1937 by Smith.[27] A section of the questionnaire used dealt with "Attitudes Toward the School." A high correlation of .81 between the attitudes of senior students and their parents indicated a rather high degree of agreement. The majority of parents favored a maintenance of the "status quo" in education. Since the current belief was that the educational system had long been excellent, parents fell in with that line of thought.

A more recent study (1944) was completed by the National Opinion Research Center[28] at the University of Denver, called, "The Public Looks at Education." They based their findings on a sample of American citizens stratified with respect to:

a. geographical areas

b. age

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[27] M. M. Smith, "Comparative Social Attitudes," The Journal of Educational Psychology, XXVIII (1937), pp. 681-93.

[28] National Opinion Research Center, The Public Looks at Education (report #21; Denver, August, 1944), p. 3.

c. sex

d. race

e. economic status

They found that of parents with children in public schools, eight out of ten reported satisfaction with what their children were getting out of their school work. While these parents were slightly more critical of public education than persons without children in school, the differences in opinion were not, on the whole, significant.

When asked to name the most important outcomes children should gain from their public school education, an equal number of Americans ranked academic learning and character training as of first importance. Following these, ranked in order of importance, were vocational training, citizenship education, and social adjustment. The percentages of persons ranking each of these characteristics as most important were as follows:

Academic subjects and character education	34%
Vocational training	26
Citizenship education	14
Social adjustment	11

When asked what should be changed in public education the results were as follows:

1. 44% of the respondents wanted changes made in curriculum and teaching methods.
2. 23% wanted changes made in the administrative organization and physical equipment of the schools.
3. 19% wanted more attention given to character and citizenship

education.

4. 10% wanted better qualified and better paid teachers. Their attitudes toward school finance were as follows:
    1. 54% of the respondents thought schools needed more money.
    2. 58% of the respondents thought that teachers were paid too little for the job they were expected to do.
    3. 68% thought that the schools should be "mostly controlled" by the state.
    4. 69% favored having the federal government turn over a certain amount of money to the states each year for their schools.

An interesting comparison can be made with item (2) of the last paragraph and item (4) of the preceding paragraph. While 58% thought that teachers were paid too little for the job they were expected to do, only 10% wanted better qualified and better paid teachers.

Recent Studies

A more recent study was carried out in 1953 in the province of Nova Scotia. A committee composed of representatives of the Department of Education, the Union of Nova Scotia Municipalities, Nova Scotia Teachers' Union, and Nova Scotia Federation of Home and School Associations was set up to consider public attitude in Nova Scotia toward the schools, the teachers, and education in general.[29]

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[29] A Survey Project of the Joint Committee on Public Attitudes Towards Our Schools, Nova Scotia Looks at its Schools (Nova Scotia Department of Education, 1953).

It was in reality an opinion survey completed by interviewing a carefully selected and representative sample of the population. The commission surveyed opinions under the following headings:

(a) Teachers

(b) Teacher-parent-pupil relationships

(c) Finance and administrative responsibility

(d) Physical facilities

(e) School program

Each respondent answered sixty-five questions with responses of, "Yes ______, No ______, Comment ______," A summary of opinions expressed indicated a moderately favorable attitude toward the phases of education studied.

Another more recent (1954) study was made by Mr. O. P. Larson, Superintendent of Schools for the County of Newell, Alberta.[30] The purpose of this study was to determine what parents, teachers, and pupils thought about their schools, and to use the findings to improve educational conditions.

Different questionnaires were given to parents, teachers, and pupils. Some of the questions provided a space for the subject to write down the reason for his response to the question. Although only sixty per cent of the parents completed and returned the questionnaire, those who did so were generally quite well satisfied with their local school.

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[30] O. P. Larson, What the People Think About Their Schools (County of Newell #4, a brochure and summary).

Parents were better satisfied than teachers that pupils were getting value from their school work and that it would be useful in later life. Each of the groups surveyed, however, had a fairly large number who felt that other courses such as industrial arts and household economics should be offered by the school. Teaching and disciplinary methods and the amount of homework assigned were all satisfactory to the majority of parents. The writer includes in his report a section on methods of "putting the findings to work," which are of less immediate interest here than the findings themselves.

The fact that sixty per cent of the parents were interested enough to return their questionnaires, and that they showed general satisfaction probably indicates that if Newell County is typical, Alberta people tend to have at least a mildly favorable attitude toward the educational system.

In 1957 a report on the fourth and last study appeared. It was made on a grant from the Kellogg Foundation to the University of Florida and was reported by Hines and Grobman[31] in an article entitled, "What Parents Think About Their Schools and What They Know About Them." Some of their findings follow:

1. As the distance of the patron's home from the school increased, the feeling for the school deteriorated.
2. The lack of a positive feeling toward the school was shared

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[31] Vynce A. Hines and Hulda Grobman, What Parents Think About Their Schools and What They Know About Them," Bulletin of the National Association of Secondary School Principals, February, 1957, pp. 15-25.

by parents with low economic and education backgrounds.

3. Upper income and education groups of parents were quite favorably disposed toward the schools and held higher expectations for the schools than did other groups.
4. The lower status groups in a community were generally ignored when schools went to the community for information and community help.

They found that parents did not know about several aspects of the schools which the authors felt they should have known. These were:

1. What was the underlying philosophy of the school?
2. How did the school rate in terms of learning outcomes according to national norms of achievement?
3. Was there any program of mental and physical health in effect?
4. Was the curriculum standardized or variable and who initiated changes?
5. Was there any provision for exceptional children-the slow, the gifted, the handicapped?
6. How were teachers chosen? How were they rated? What were the qualifications and duties of the supervisory staff? How were the outstanding teachers and supervisors rewarded?

When parents were asked specific questions their replies were usually favorable:

1. Most parents thought the three R's were well taught; they considered the total program either average or superior; they felt that schooling was helpful to the child's present

and future needs.

2. Parents liked the activity program, the teachers, the amount of homework, the type of teaching program and the discipline.
3. More than half the respondents knew the principal to talk to and another 25% knew him to see him.
4. Seventy-four per cent of the respondents knew the teachers.
5. Thirty per centy of the parents were not familiar enough with the program to comment. Quite a number of parents expressed satisfaction with hot school lunch programs in schools, where no such program was in effect.
6. Many parents (3,000 out of 6,000) thought that the financial position of the parent influenced the way the child was treated in the school.
7. Parents with similar financial and educational backgrounds living in newly developed suburban areas were more willing to support schools, to pay increased taxes to improve school facilities and raise teachers' salaries than parents in older residential areas.

Of the five studies presented only two since 1950 were Canadian. Techniques differed in all cases and ranged from questionnaire to interview. None of the surveys indicate that a statistical validation of either the scale or its items had been carried out.

CHAPTER III

RESEARCH PLAN AND DESIGN

Construction of the Scale

Preliminary work toward devising an attitude scale was done by students in the Faculty of Education in the 1955 winter session. During this phase, forty-eight statements were patterned after those in Remmers'[32] Introduction to Opinion and Attitude Measurement, Hand's[33] Illinois Study and Cronbach's[34] Essentials of Psychological Testing. Different questions were selected to form two scales, Scale A and Scale B. Half of the questions were positively worded and the remainder were negative.

Scale A was administered to professors of the various university faculties other than Education and Scale B to professors of the Faculty of Education. These people were asked to make notes of weaknesses and inconsistencies. Their response was generous. They critized the statements for ambiguity, generalities, and the use of a double negative to indicate a positive response. Many of the questions were re-worded and salvaged; others were discarded. At this time it was decided that the attitudes which exist might be adequately sampled by responses to questions

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[32] H. H. Remmers, Introduction to Opinion and Attitude Measurement (New York: Harper and Brothers, 1954).

[33] H. C. Hand, What People Think About Their Schools (New York: World Book Company, 1948).

[34] L. J. Cronbach, op. cit.

in the following areas:

1. the general value of education.
2. discipline.
3. teaching efficiency.
4. the curriculum.
5. costs.

Fifty-one statements were selected, ten in each of four component areas and eleven in the fifth. Dr. Gilles, Dr. Coutts, and Dr. Dunlop again screened the questions in an effort to eliminate undesirable features. The questions were randomly selected to form two scales, Form I and Form II, retaining five items from each component for each scale. Forms I and II were distributed to adults by students attending the University of Alberta Summer Session in 1955. Fifty-six adults from various parts of Alberta completed Form I and fifty-three completed Form II.

The data was subjected to item and component analysis. For each item and each component a product-moment correlation against total score was computed. The significance of the departure from zero of the correlation was determined from Table 25 of Statistics in Psychology and Education.[35] Table I shows the "Classification of Items" and the significance level of each item from the item analysis of Forms I and II.

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[35] H. E. Garret, Statistics in Psychology and Education. (New York: Longmans Green and Company, 1953), p. 200.

TABLE I CLASSIFICATION OF ITEMS OF THE ALBERTA ATTITUDE SCALES FORM I AND FORM II

.01 means 1% level of significance
.05 means 5% level of significance
- means not significant

GENERAL VALUE OF EDUCATION

Favorable

.01 1. Schools are doing a better job now helping students to become happy, useful citizens than they did when I was at school.

- 2. Every child in Alberta should have the opportunity to go to school.

.01 3. Schools of today prepare children to cope with life better than they did when I was young.

.01 4. Schooling helps a person to be a good citizen.

.01 5. The schools of today give more support and encouragement to average students than they used to do.

Unfavorable

.01 6. Too much of a person's lifetime is spent getting an education.

- 7. Progress in school depends not so much on what you know but who you know.

.01 8. Schools today tend to develop lazy students.

.05 9. On the whole the schools are doing a poor job.

.01 10. I am not satisfied with the schools in my own district.

DISCIPLINE

Favorable

- 11. Teachers deserve more respect from pupils than they now receive.

TABLE I (continued)

- 12. School discipline helps an individaul throughout his life.

.01 13. The idea of self-discipline now used in many of our schools today, is more effective than discipline through fear.

.01 14. The initiative stimulated in schools of today benefits a person the rest of his life.

.05 15. In Alberta school children learn to treat one another fairly and kindly.

Unfavorable

.01 16. The type of discipline in our schools is to blame for most of our juvenile delinquency.

- 17. I would rather pay to have my child attend a good private school than a good public or separate school.

.01 18. Discipline in most schools is too lax.

.05 19. Pupils are not learning efficient work habits.

.01 20. The play atmosphere of schools today does not develop perseverence.

TEACHER EFFICIENCY

Favorable

.01 21. The present system of education in Alberta promotes more efficient learning than ever before.

.01 22. Most teachers do their best to understand their pupils.

- 23. Teachers are sincerely concerned about their pupils' progress.

.01 24. A real effort is being made in Alberta to increase the number of well-trained teachers.

.01 25. The teaching methods of today are a real inspiration to pupils.

Unfavorable

.01 26. I could teach my children better than the schools do.

.05 27. Teachers should drill their pupils more thoroughly.

TABLE I (continued)

-	28.	Teaching is an easy way of getting money for doing very little.
.01	29.	Many teachers are interested in pupils only as much as their job requires.
.01	30.	The quality of teachers is falling.
		CURRICULUM
Favorable		
.01	31.	Athletics are a very beneficial part of the school program.
.01	32.	The variety of subjects taught in our schools today is better for the student than the former emphasis on only a few subjects.
.01	33.	The standard of education in Alberta is equal to that in any part of Canada.
.01	34.	Students of today are better informed than I was when I was going to school.
.01	35.	The schools under present conditions are teaching the things students should learn.
Unfavorable		
.05	36.	Schools should put more emphasis on arithmetic, spelling, reading and writing.
-	37.	The schools should offer more subjects of a practical nature.
.01	38.	Students are promoted with too little knowledge of their subjects.
.01	39.	The schools are trying to teach so many things that none are really done well.
-	40.	Students have to spend too much time doing homework.

TABLE I (continued)

COSTS

Favorable

.05 41. Most good teachers are being underpaid.

- 42. The bus service which some schools provide to bring pupils from long distances is well worth what it costs.

.01 43. I am glad to see more money being spent to equip school science laboratories adequately.

.01 44. It is worth the cost of counters, stoves and sewing machines to have good facilities for household economic courses.

- 45. Principals of large schools should receive a salary of at least $6,000 a year.

Unfavorable

.01 46. Some of our school buildings are unnecessarily elaborate and costly.

.01 47. School administration costs (caretaking and secretarial work) are much too high.

.01 48. School costs are too high for the results achieved.

.05 49. For commercial courses in our high schools we are spending too much for equipment, typewriters, special desks and paper.

.05 50. Money raised by taxes for school purposes should not be used for school athletic equipment.

- 51. The cost to Alberta pupils of pencils, notebooks and textbooks is too high.

All items for which correlations were not significantly different from zero at the .01 level were discarded.

Tables II and III show which items were selected from Table I to make Forms I and II. Underlined item numbers in the tables failed to

meet the criterion of an efficient item and were deleted from subsequent forms of the scale. The remaining items are shown in Table IV and were randomly selected to make Form III of the scale. This random numbering resulted in the sequence of items shown in Table V. The validation of items and components of Form III is considered in further detail in Chapter IV.

TABLE II ITEM NUMBERS OF FORMS I AND II FOLLOWED BY THE ITEM NUMBER FROM "CLASSIFICATION OF ITEMS" SHEET[x]

FORM I		FORM II	
1	15	1	35
2	4	2	9
3	43	3	50
4	5	4	10
5	6	5	36
6	26	6	44
7	17	7	30
8	32	8	23
9	18	9	40
10	41	10	16
11	24	11	46
12	7	12	12
13	39	13	42
14	48	14	29
15	21	15	8
16	34	16	33
17	25	17	13
18	37	18	22
19	47	19	11
20	2	20	38
21	27	21	28
22	20	22	1
23	31	23	45
24	14	24	3
25	49	25	19
		26	51

[x] _ means deleted after item analysis

TABLE III CLASSIFICATION OF COMPONENTS IN FORMS I AND II[x]

COMPONENTS	FORM I ITEM NUMBERS	FORM II ITEM NUMBERS
General value of education	2, 4, 5, 12, 20	2, 4, 15, 22, 24
Discipline	1, 7, 9, 22, 24	10, 12, 17, 19, 25
Teacher efficiency	6, 11, 15, 17, 21	7, 8, 14, 18, 21
Curriculum	8, 13, 16, 18, 23	1, 5, 9, 16, 20
Costs	3, 10, 14, 19, 25	3, 6, 11, 13, 23, 26

[x] _ means deleted after item analysis

TABLE IV ITEMS GROUPED IN COMPONENTS RETAINED AFTER ITEM ANALYSIS OF FORMS I AND II

GENERAL VALUE OF EDUCATION

Favorable

3. Schools of today prepare children to cope with life better than they did when I was young.

5. The schools of today give more support and encouragement to average students than they used to.

Unfavorable

6. Too much of a person's lifetime is spent getting an education.

8. Schools today tend to develop lazy students.

10. I am not satisfied with the schools in my own district.

DISCIPLINE

Favorable

13. The idea of self-discipline now used in many of our schools today, is more effective than discipline through fear.

14. The initiative stimulated in schools of today benefits a person the rest of his life.

TABLE IV (continued)

Unfavorable

16. The type of discipline in our schools is to blame for most of our juvenile delinquency.

18. Discipline in most schools is too lax.

20. The play atmosphere of schools today does not develop perseverence.

TEACHER EFFICIENCY

Favorable

21. The present system of education in Alberta promotes more efficient learning than ever before.

24. A real effort is being made in Alberta to increase the number of well-trained teachers.

25. The teaching methods of today are a real inspiration to pupils.

Unfavorable

26. I could teach my children better than the schools do.

30. The quality of teachers is falling.

CURRICULUM

Favorable

31. Athletics are a very beneficial part of the school program.

32. The variety of subjects taught in our schools today is better for the student than the former emphasis on only a few subjects.

33. The standard of education in Alberta is equal to that in any part of Canada.

34. Students of today are better informed than I was when I was going to school.

TABLE IV (continued)

35. The schools under present conditions are teaching the things students should learn.

COSTS

Favorable

43. I am glad to see more money being spent to equip school science laboratories adequately.

44. It is worth the cost of counters, stoves, and sewing machines to have good facilities for household economic courses.

Unfavorable

46. Some of our school buildings are unnecessarily elaborate and costly.

47. School administration costs (caretaking and secretarial work) are much too high.

48. School costs are too high for the results achieved.

The sequence of items for Form III follows in Table V.

TABLE V SEQUENCE OF ITEMS FOR FORM III

Form III Number	Classification Number	Form III Number	Classification Number	Form III Number	Classification Number
1	3	9	6	17	33
2	14	10	35	18	10
3	30	11	8	19	25
4	24	12	46	20	21
5	20	13	16	21	26
6	44	14	31	22	18
7	13	15	48	23	34
8	47	16	43	24	5
				25	32

Table VI shows the questions of Form III in their final form as printed and distributed.

TABLE VI ITEMS FOR FORM III

1. Schools of today prepare children to cope with life better than they did when I was young SA A U D SD
2. The initiative stimulated in schools of today benefits a person the rest of his life. SA A U D SD
3. The quality of teachers is falling. SA A U D SD
4. A real effort is being made in Alberta to increase the number of well-trained teachers. SA A U D SD
5. The play atmosphere of schools today does not develop perseverence. SA A U D SD
6. It is worth the cost of counters, stoves, and sewing machines to have good facilities for household economic courses. SA A U D SD
7. The idea of self-discipline now used in many of our schools today, is more effective than discipline through fear. SA A U D SD
8. School administration costs (caretaking, secretarial work and so forth) are much too high. SA A U D SD
9. Too much of a person's lifetime is spent getting an education. SA A U D SD
10. The schools under present conditions are teaching the things students should learn. SA A U D SD
11. Schools today tend to develop lazy students. SA A U D SD
12. Some of our school buildings are unnecessarily elaborate and costly. SA A U D SD
13. The type of discipline in our schools is to blame for most of our juvenile delinquency. SA A U D SD
14. Athletics are a very beneficial part of the school program. SA A U D SD

TABLE VI (continued)

15. School costs are too high for the results achieved. SA A U D SD

16. I am glad to see more money being spent to equip school laboratories adequately. SA A U D SD

17. The standard of education in Alberta is equal to that in any part of Canada. SA A U D SD

18. I am not satisfied with the schools in my own district. SA A U D SD

19. The teaching methods of today are a real inspiration to pupils. SA A U D SD

20. The present system of education in Alberta promotes more efficient learning than ever before. SA A U D SD

21. I could teach my children better than the schools do. SA A U D SD

22. Discipline in most schools is too lax. SA A U D SD

23. Students of today are better informed than I was when I was going to school. SA A U D SD

24. The schools of today give more support and encouragement to average students than they used to do. SA A U D SD

25. The variety of subjects taught in our schools today is better for the student than the former emphasis on only a few subjects.

Table VII summarizes the item analysis of Forms I and II. Form I was answered by fifty-six respondents and Form II by fifty-three. The significance level is based on fifty degrees of freedom.

TABLE VII ITEM ANALYSIS FORMS I AND II

FORM I			FORM II		
Item Number	r	Sig. Level	Item Number	r	Sig. Level
1	.27	.05	1	.48	.01
2	.362	.01	2	.329	.05
3	.423	.01	3	.336	.05
4	.49	.01	4	.534	.01
5	.40	.01	5	.30	.05
6	.492	.01	6	.413	.01
7	.25	-	7	.59	.01
8	.567	.01	8	.258	-
9	.486	.01	9	.10	-
10	.273	.05	10	.336	.05
11	.46	.01	11	.348	.05
12	.187	-	12	-.015	-
13	.432	.01	13	.05	-
14	.466	.01	14	.39	.01
15	.638	.01	15	.614	.01
16	.537	.01	16	.568	.01
17	.532	.01	17	.629	.01
18	.208	-	18	.369	.01
19	.376	.01	19	-.207	-
20	.154	-	20	.443	.01
21	.348	.05	21	.211	-
22	.529	.01	22	.385	.01
23	.569	.01	23	.203	-
24	.488	.01	24	.451	.01
25	.315	.05	25	.324	.05
			26	.018	-

In this preliminary analysis it can be seen from Tables VII and VIII that twelve items were not significant, nine were significant at the .05 level and thirty items were significant at the .01 level. Twenty-five of the most significant items were chosen for Form III.

TABLE VIII CORRELATIONS OF ITEMS GROUPED ACCORDING TO COMPONENTS

Components	FORM I			FORM II		
	Number	r	Level	Number	r	Level
General value of education	2	.362	.01	2	.329	.05
	4	.490[x]	.01	4	.534[x]	.01
	5	.400[x]	.01	15	.614[x]	.01
	12	.187	-	22	.386	.01
	20	.154	-	24	.488[x]	.01
Discipline	1	.270	.05	10	.336[x]	.05
	7	.250	-	12	-.015	-
	9	.486[x]	.01	17	.629[x]	.01
	22	.529[x]	.01	19	-.207	-
	24	.488[x]	.01	25	.324	.05
Teacher efficiency	6	.492[x]	.01	7	.590[x]	.01
	11	.460[x]	.01	8	.258	-
	15	.638[x]	.01	14	.390	.01
	17	.532[x]	.01	18	.369	.01
	21	.350	.05	21	.211	-
Curriculum	8	.567[x]	.01	1	.480[x]	.01
	13	.432	.01	5	.300	.05
	16	.537[x]	.01	9	.100	-
	18	.208	-	16	.568[x]	.01
	23	.569[x]	.01	20	.443	.01
Costs	3	.423[x]	.01	3	.336	.05
	10	.273	.05	6	.413[x]	.01
	14	.466[x]	.01	11	.348[x]	.01
	19	.376[x]	.01	13	.050	-
	25	.315	.05	23	.203	-
				26	.018	-

[x] items retained for Form III

After deleting the inferior items (Table III), component and total scores were re-calculated for each answer sheet of both Form I and Form II. From these retained item scores new component analyses were made. The correlations for component against total score are shown in Table IX. At this stage all data were significant at the .01 level. For the number

of respondents (1,026), an r of .08 was required.

TABLE IX CORRELATION OF COMPONENT SCORES AGAINST TOTAL SCORE ON TWO PRELIMINARY FORMS OF ALBERTA SCALE

Component	Form I r	Form II r
General value of education	.48	.78
Discipline	.63	.52
Teacher efficiency	.66	.51
Curriculum	.74	.59
Costs	.53	.40

Use of the Scale

The scale was administered to a widely distributed number of adults throughout the province. Teachers, principals, and superintendents distributed the questionnaire and returned the completed forms to the writer for analysis. Limited inferences may be drawn from the personal data portion of the scale because of the inherent bias of the sample Since the respondents were selected by teachers they might be assumed to be mainly friends of teachers and probably more favorably disposed toward our educational system than a truly representative sample might have been. However, the procedure for analyzing a representative sample was utilized.

Personal data were gathered from each person when possible on the following items: sex, parental status, size of center of population, age, religion, native language, level of formal education, and socio-economic status. The respondents were grouped in terms of personal data

and means and standard deviations for each group were computed and compared. The significance of differences was tested.

Another use of the scale was to illustrate the utility of the calculating machines of the Department of Education in analyzing statistical data. All data were transferred to mark sensing cards and punched on International Business Machine cards.

CHAPTER IV

ANALYSIS OF DATA

Item Analysis

At least forty-four persons representing teachers, principals, superintendents, and others assisted in distributing 2,500 copies of Form III. It is probable that not all these reached the hands of respondents. The gross return was 1,040, forty of which were incomplete and ten arrived too late for inclusion in the analysis. The item analysis is, therefore, based on the number of persons completing each item. This varies, due to omissions, from 981 to 1,022.

Table X groups the items and the coefficients of correlation of item versus total score according to the components of the scale. This has been done to permit observation of the efficiency of items constituting each component. The correlation can be seen for the item's first appearance in Form I or Form II and its second appearance in the final scale Form III. The correlations decreased for seventeen items, increased for seven, and one remained constant as the sample size was increased from fifty-six and fifty-three to 1,000. The evidence indicates that the items are effective in measuring adult attitude toward the Alberta educational system.

The decreases in the coefficients of correlation of items on the final scale were not unexpected. When results are based on only fifty responses, considerable changes may be anticipated when the sample size is

substantially increased. Furthermore, the item may be apparently quite efficient in measuring attitudes of an individual from a homogeneous group but as the heterogeneity of the group increases, the item's true efficiency may be vastly altered. For either of these reasons considerable change in the correlation of an item against total score may be expected.

TABLE X CORRELATION OF ITEM RESPONSES AGAINST TOTAL SCORE FOR PRELIMINARY AND FINAL ITEM ANALYSES GROUPED BY COMPONENTS

Component	Form III Number	Classified Item Number	Forms I or II r	Form III r
General value of education	1	3	.49	.51
	24	5	.49	.54
	9	6	.40	.26
	11	8	.61	.36
	18	10	.53	.35
Discipline	7	13	.63	.64
	2	14	.49	.58
	13	16	.34	.38
	22	18	.49	.45
	5	20	.53	.41
Teacher efficiency	20	21	.64	.66
	4	24	.46	.36
	19	25	.53	.42
	21	26	.49	.46
	3	30	.59	.37
Curriculum	14	31	.57	.33
	25	32	.57	.42
	17	33	.57	.45
	23	34	.54	.42
	10	35	.48	.47
Costs	16	43	.42	.27
	6	44	.41	.38
	12	46	.35	.54
	8	47	.38	.29
	15	48	.47	.31

Component Analysis

At the outset it should be stated that by assigning equal value to each of five components we were in effect assuming that each contributes equally to the formation of attitude toward education. There is no guarantee that this is true. Furthermore, there may be other factors not included in these five components effective in influencing attitude toward education. In Table X the numbers of the questions on Form III which make up each component are shown. The scores for these questions on each paper were summed, punched on a set of International Business Machine cards, and their frequency accumulated on a vertical axis in intervals of two units each. Total scores on the same questionnaires were accumulated on the horizontal axis in ten unit intervals. The frequencies of this scattergram were used to calculate the following coefficients of correlation.

TABLE XI CORRELATION OF COMPONENT SCORES AGAINST TOTAL SCORE ON TWO PRELIMINARY FORMS AND FINAL FORM OF ALBERTA SCALE

Component	Form I r	Form II r	Form III r
General value of education	.48	.78	.81
Discipline	.63	.52	.78
Teacher efficiency	.66	.51	.78
Curriculum	.74	.59	.76
Costs	.53	.40	.59

The precision and accuracy with which this was done by International

Business Machines could not have been achieved by hand without many hundreds of hours of work. Previous attempts at a similar project with very large intervals required approximately three man-hours to complete one frequency scattergram. In addition there was greater probability of error since neither sub-totals nor tallies of omitted responses were kept.

All the correlation coefficients showed an increase as sample size increased from some fifty in Forms I and II to approximately 1,000 in Form III. In Table XI it may be seen that component "general value of education" seems to contribute in a greater proportion to the measurement of attitude toward the Alberta educational system with an r of .81, than component "costs" with an r of .59. The correlations must be regarded as reasonably reliable, however, when it is realized that 1,000 cases constituted the sample. We can feel confident that each of the scores on these components contributes largely to the assessment of the attitude which the whole scale is designed to measure.

CHAPTER V

Analysis of Personal Data

A set of cards was punched on the International Business Machine showing all the sub-divisions of each of the eight personal data classifications and also showing total score. This meant that a sorting machine could classify the cards in terms of each of these groups. When this had been done, the total scores on each card were accumulated in intervals of ten units. The range extended from twenty to one hundred and nineteen. As an example the cards were classified by sex into "male" and "female" respondents. The number of males scoring between twenty and twenty-nine were accumulated, those between thrity and thirty-nine, forty and forty-nine and so on. The same was done for the cards in the "female" pile. These frequencies were used to calculate the means and standard deviations of each sub-group. Also calculated was the standard error of each mean and the standard error of the difference of two means. The significance of the differences of any two comparable means was determined by a critical ratio test in distributions where the variances were homogeneous.[36] When standard deviations of two sub-groups were significantly different, it was necessary to apply the Cochran and Cox test for significance of mean differences.[37]

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[36] H. F. Garret, Statistics in Psychology and Education, p. 215, and Table D, p. 427.

[37] Allan E. Edwards, Experimental Design In Psychological Research (New York: Rinehart and Company, 1950), p. 168.

Table XII shows the data grouped according to sex.

TABLE XII ALBERTA ATTITUDE SCALE MEAN SCORES, STANDARD DEVIATIONS, STANDARD ERRORS AND SIGNIFICANCE LEVELS OF THE DIFFERENCES BETWEEN MEANS, GROUPED BY SEX[x]

Sex	% of Sample	N	Mean	SD	S_M	D_M	S_D	D_M/S_D	Sig.
Male	52	506	86.04	12.84	.571	2.37	.82	2.88	.01
Female	48	468	88.41	12.82	.592				

[x]NOTE:

N	number
SD	standard deviation
S_M	standard error of mean
D_M	difference between means
S_D	standard error of the difference between means
D_M/S_D	critical ratio
Sig.	significance of difference between means

The evidence indicates that women have a significantly more favorable attitude toward education than men. This may be partly due to the somewhat different biological function of women as compared to men. From earliest history their life has been intimately connected with the rearing of children and the making of the family home. The life, welfare, and ambition of the children have been fondly nourished. Their progress and achievement in school is of vital concern to the mother. Men, on the other hand, have left much of the child training to women. Their activities are largely concerned with providing necessities for the home and, preoccupied with this task, their minds have been less intimately connected with pupil progress in schools.

Table XIII shows the data grouped according to parents and non-parents.

TABLE XIII ALBERTA ATTITUDE SCALE MEAN SCORES, STANDARD DEVIATIONS, STANDARD ERRORS AND SIGNIFICANCE LEVELS OF THE DIFFERENCES BETWEEN MEANS, GROUPED BY PARENTS AND NON-PARENTS

Sex	% of Sample	N	Mean	SD	S_M	D_M	S_D	D_M/S_D	Sig.
Parent	94.5	847	87.31	13.06	.448	1.98	1.58	1.25	-
Non-parent	5.5	49	85.33	10.64	1.52				

Between parents and non-parents no significant difference in attitude was evident. This is a somewhat surprising result. Parents do show a slightly higher mean score but not significantly higher. The non-parent group is, of course, too small with only forty-nine representatives. If a larger representative sample were questioned the results would be more valid and might be different from this finding.

The classification of data according to urban and rural domiciles (Table XIV) shows that no significant difference in attitude exists between persons living in cities, towns, villages, and rural areas.

The modern means of communication which permeate our society disseminate news and information to all areas of our province. In so doing, a uniformity of attitude seems to be developing throughout rural and urban Alberta toward our present educational system. The number of persons representing towns is, of course, too small at twenty-eight to be a truly representative sample. The lower portion of Table XIV shows

that no means were found to be significantly different.

TABLE XIV ALBERTA ATTITUDE SCALE MEAN SCORES, STANDARD DEVIATIONS, STANDARD ERRORS, AND SIGNIFICANCE LEVELS OF THE DIFFERENCES BETWEEN MEANS, GROUPED BY POPULATION CENTERS

Population Centers	% of Sample	N	M	SD	S_M
Cities (10,000-more)	41	407	86.79	12.47	.618
Towns (5,000-10,000)	3	28	88.79	15.37	2.904
Villages (500-5,000)	26	254	87.77	11.60	.727
Rural districts	30	293	87.23	12.72	.743

SIGNIFICANCE LEVELS

Population Centers	Critical ratio	Towns	Villages	Rural Districts
Cities (10,000-more)	Critical ratio	.682	1.0003	.454
	Signif. level	-	-	-
Towns (5,000-10,000)	Critical ratio		.341	.521
	Signif. level		-	-
Villages (500-5,000)	Critical ratio			.519
	Signif. level			-

Table XV classifies the respondents according to age groups. Only one set of scores indicates significantly different attitudes. This occurs between the groups aged twenty to thirty-four and thirty-five to fifty-four, the younger group expressing a more favorable attitude. There may be several reasons for this attitude. Younger people may have more pleasant memories of their school days. On the other hand middle-

aged persons may survey more critically the function of the schools. Greater insight by this group may result in criticism of the present system though not necessarily in criticism of education in general. On the other hand their critical attitude may arise from concern over the taxes necessary to support education. Older persons have less intimate contact with schools as their children have grown up. They seem less concerned and more content to accept the educational system as it is.

TABLE XV ALBERTA ATTITUDE SCALE MEAN SCORES, STANDARD DEVIATIONS, STANDARD ERRORS, AND SIGNIFICANCE LEVELS OF THE DIFFERENCES BETWEEN MEANS, GROUPED ACCORDING TO AGE

Age Groups	% of Sample	N	Mean	SD	S_M
20 - 34	21	203	89.30	13.22	.928
35 - 54	71	695	86.59	12.92	.491
55 and over	8	84	86.64	13.38	1.458

SIGNIFICANCE LEVELS

Age Groups		35 - 54	55 and over
20 - 34	Critical ratio Signif. level	2.585 .01	1.537 -
35 - 54	Critical ratio Signif. level		.032 -

Table XVI groups the respondents in terms of religion. The standard deviations of the Protestant and Roman Catholic groups were similar but they both differed significantly from that of the Others group. The Cochran and Cox test was, therefore, applied. The results show that persons other than Protestant and Roman Catholic groups had a significantly more favorable attitude toward education. This would include Greek Orthodox, Jews, Mennonites, and Mormons.

TABLE XVI ALBERTA ATTITUDE SCALE MEAN SCORES, STANDARD DEVIATIONS, STANDARD ERRORS, SIGNIFICANCE LEVELS OF THE DIFFERENCES BETWEEN MEANS, GROUPED ACCORDING TO RELIGION

Religions	% of Sample	N	Mean	SD	S_M
Protestant	80	795	85.97	14	.497
Roman Catholic	7	71	85.49	13.23	1.571
Others	11	113	91.85	10.54	.993

SIGNIFICANCE LEVELS

Religions		Roman Catholic	Other religions
Protestant	Critical ratio Signif. level	.2303 -	5.29 .01
Roman Catholic	Critical ratio Signif. level		3.424 .01

The grouping according to native language of the respondents is

shown in Table XVII.

TABLE XVII ALBERTA ATTITUDE SCALE MEAN SCORES, STANDARD DEVIATIONS, STANDARD ERRORS, AND SIGNIFICANCE LEVELS OF THE DIFFERENCES BETWEEN MEANS, GROUPED ACCORDING TO LANGUAGE

Language	% of Sample	N	Mean	SD	S_M
English	81	792	86.17	13.04	.464
Ukrainian and Polish	10	101	93.51	10.19	1.013
French and Others	9	88	89.04	11.57	1.233

SIGNIFICANCE LEVELS

Language		Ukrainian and Polish	French and Others
English	Critical ratio Signif. level	6.6 .01	2.19 .05
Ukrainian and Polish	Critical ratio Signif. level		2.81 .01

The comparison of the mean scores for the English and Polish-Ukrainian groups required the use of the Cochran and Cox test. Other comparisons were made by the test of the null hypothesis that the difference between mean scores was zero. The conclusions follow:

1. The attitude of the group consisting of "French and Others" was significantly more favorable toward Alberta education than the "English" group.

2. The attitude of the "Ukrainian-Polish" group was significantly more favorable than either that of the "French and Others" or "English" groups.

It would seem that central Europeans hold education in high esteem. This attitude appears to have been transferred to second generation Canadians living in Alberta. The writer feels that placing French and Others in one group is unfortunate since they might hold diverse opinions regarding education. They were grouped together, however, as their members were inadequate to be considered separately. It was unexpected to find the most favorable attitude toward Alberta education held by Ukrainian and Polish Canadians and the least favorable attitude held by persons whose native language is English.

In the classification of respondents in terms of the levels of formal education attained (Table XVIII), it was necessary to use the Cochran and Cox only once in comparing the "Grade IX or Less" with the "Technical or Business College" group. The attitude of the "Grade IX or Less" group toward education was significantly more favorable than groups representing increasing levels of formal education. The trend is also apparent in that the "Grades X, XI, and XII" group also holds a significantly more favorable attitude than the "University" group but differs slightly from its neighboring group with "Technical or Business College" training.

This trend of the more the education the less favorable the attitude is difficult to explain. Some possible reasons may be:

1. The groups lacking formal schooling respect training they have

not received.

2. The groups with little schooling may try to please the persons administering the questionnaire especially if this person were a school principal or superintendent connected with their children's educational success.

TABLE XVIII ALBERTA ATTITUDE SCALE MEAN SCORES, STANDARD DEVIATIONS, STANDARD ERRORS, AND SIGNIFICANCE LEVELS OF THE DIFFERENCES BETWEEN MEANS, GROUPED ACCORDING TO EDUCATION

Education	% of Sample	N	Mean	SD	S_M
Grade IX or less	27	262	89.19	12.32	.762
Grade X, XI, XII	43	429	87.25	12.37	.596
Technical or Business College	19	186	86.06	14.20	1.04
University	10	101	83.31	13.08	1.301

SIGNIFICANCE LEVELS

Education		Grade X, XI XII	Technical or Business College	University
Grade IX or less	Critical ratio Signif. level	2.008 .05	2.424 .05	4.02 .01
Grade X, XI, XII	Critical ratio Signif. level		.993 -	2.753 .01
Technical or Business College	Critical ratio Signif. level			1.59 -

3. The groups possessing superior training may be able to detect imperfections in the school system and hence hold less favorable attitudes toward the Alberta educational system.

Table XIX classifies the respondents in terms of socio-economic status. The three highest income groups for persons earning annual salaries of \$6,000-\$9,000; \$9,000-\$12,000; and \$12,000-\$15,000; were pooled into a single group because of the small number of respondents in these higher income groups.

TABLE XIX ALBERTA ATTITUDE SCALE MEAN SCORES, STANDARD DEVIATIONS, STANDARD ERRORS, AND SIGNIFICANCE LEVELS OF THE DIFFERENCES BETWEEN MEANS, GROUPED ACCORDING TO SOCIO-ECONOMIC STATUS

Economic Status	% of Sample	N	Mean	SD	S_M
Under \$3,000	15	130	88.88	11.94	1.047
\$3,000 - \$6,000	62	530	81.61	12.83	.557
Over \$6,000	22	189	84.76	13.59	.988

SIGNIFICANCE LEVELS

Socio-economic Status		\$3,000-\$6,000	Over \$6,000
Under \$3,000	Critical ratio Signif. level	6.12 .01	2.857 .01
\$3,000 - \$6,000	Critical ratio Signif. level		2.77 .01

The evidence leads to these conclusions: the lowest income group, earning under $3,000 annually, has the most favorable attitude toward Alberta education followed by the group earning over $6,000 annually. The group earning $3,000 to $6,000 annually has the most unfavorable attitude toward education. Reasons for these findings are not readily apparent. It may be that the group of lower economic status feels that their children may suffer because they come from lower income groups. They feel, therefore, that one sure method of securing economic security for their children is to improve their children's educational level.

Persons earning $3,000 to $6,000 per year are somewhat more economically secure and are not alarmed by thoughts of adverse treatment of their children should they disagree with or criticize the educational system.

With respect to the years of formal education of respondents, it almost seems that as familiarity with the educational system increases the attitude toward the present day educational system deteriorates.

We may summarize the findings in the following manner. The most favorable attitude toward the Alberta educational system is held by female persons under thirty-four years of age, neither Protestant nor Roman Catholic, whose native language is either Polish or Ukrainian with formal education of grade nine or less, and earning less than $3,000 annually. The most unfavorable attitude is held by men aged thirty-five to fifty-four years, either Protestant or Roman Catholic, whose native language is English who are university graduates earning from $3,000 to $6,000 annually.

CHAPTER VI

Summary and Conclusions

The main purpose of the study has been the construction of a scale to measure present attitude toward the Alberta educational system. The finding of favorable or unfavorable attitudes reflects on the present educational system in Alberta but not on education generally. A further purpose has been to construct scale items, classified into five components, and to validate the items and components. A product-moment coefficient of correlation was computed for each item and component against total score. Personal data have been gathered from the respondents and calculations have been made on samples of the data selected according to various personal items appearing on the first page of the scale. The findings must be viewed with considerable scepticism due to the small number found in certain sub-groups, and the possibility of resulting bias.

The method of item analysis used in this study has been a modification of the Flanagan method described by Cooney.[38]

Summary of Findings

1. The product-moment coefficient of correlation of item score against total score and of component score against total score is an efficient method of eliminating items or

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[38] David E. Cooney, Methods of Establishing the Reliability and Validity of Tests (Edmonton: April, 1952), p. 51.

components of low discriminating power.

2. The initial try-out of the items and components of the scale should be to a sample consisting of several hundred persons. This might eliminate later marked variation of an item's efficiency when applied to larger samples of the population.
3. A more successful attempt to select an unbiased sample must be made if conclusions are to possess a high measure of validity.
4. Findings from the analysis of personal data follow:
   (a) Women have a more favorable attitude than men toward the Alberta educational system.
   (b) The attitude of parents and non-parents is not appreciably different.
   (c) No difference in attitude exists among persons living in cities, towns, villages, and rural areas.
   (d) Persons under thirty-five years of age have a more favorable attitude toward education than those between thirty-five and fifty-four years of age.
   (e) The attitude of Protestants and Roman Catholics is not distinguishable and it is less favorable toward the Alberta educational system than persons representing other religions.
   (f) The attitude of Ukrainian and Polish Canadians toward the Alberta educational system is more favorable than the English or French speaking groups.

(g) Increasing amounts of formal education result in increasingly less favorable attitudes toward the Alberta educational system.

(h) Persons earning less than $3,000 annually have the most favorable attitude toward the Alberta educational system, followed by those earning over $6,000 a year. Persons earning from $3,000 to $6,000 a year have the most unfavorable attitude.

More confidence could be placed in the findings if the extent to which errors of measurement influencing test scores were known. The possible unrepresentativeness of the sample to which Form III was administered is further reason that findings should be viewed with reservation.

A significant limitation of this study affecting the possible use of the scale should be recognized. The study has not included procedures to determine the reliability of the scale.

Insights Into Attitudes

The scale has produced considerable comment and criticism from persons located in various parts of Alberta. Ninety-two people expanded their answers or gave reasons for marking certain questions as they did. They accordingly inserted statements on the scale. Eleven others enclosed letters with their completed scale offering suggestions and criticisms.

The criticisms were varied. Several persons felt that questions seven and thirteen concerning discipline in schools were leading questions

and poorly stated. They felt they lacked a satisfactory basis for comparing the statements. It is noteworthy, however, that the item analysis showed high correlation for these two items. Others felt that statements attributed deeds to the schools which they had not performed. The "stimulating initiative" in question two and "discipline ....causing juvenile delinquency" in question thirteen are examples.

A number of persons felt that texts and curriculum should be revised. They questioned typing in grade nine, dodgeball in physical education periods, expenditure of money on certain expensive equipment and buildings. Obviously not all criticisms were justified nor were they necessarily sound. The most valid criticisms received concerned the meaning and wording of questions and the use of undefined terms. Examples cited were: "self-discipline," "play atmosphere," "a real effort .... to train more teachers." The fact that ten per cent of the respondents felt compelled to comment on the scale indicates to the writer that the topics are of real concern to people or that the questions were indeed badly worded. Furthermore, people do not appear to be well informed on many phases of education - a fault urgently needing correction.

The writer was impressed with the quality of argument and discernment of the eleven persons who wrote letters concerning the scale. Their contributions have been very valuable and are sincerely appreciated.

Effectiveness of Methods

The item analysis method of using a product-moment correlation of item score against total score for all answers to the item seems to be

effective. From the analysis of data arising from the preliminary administration of Forms I and II, twelve of fifty-one items proved not significant and were eliminated. The remaining items were classified as significant or highly significant. The items chosen to make up Form III retained their efficiency when measured in terms of a second product-moment correlation based on 1,000 cases. The correlation between component and total scores shown in Table XI shows considerable increase in Form III over the two preliminary forms. It may be, however, that one component contributes to a greater extent than another in attitude formation.

The personal data allow a great variety of analyses. With a larger representative sample the inter-relationships between sub-groups could be more accurately determined. An example of this might be: how does the attitude of males aged twenty to thirty-four living in rural areas compare to females aged thirty-five to fifty-four living in large cities?

In this analysis, because of smallness of sample size, no attempt was made to determine the inter-relationships between sub-groups. However, the use of card punch and card sorting machines allows the extraction of a host of such relationships easily and rapidly. Another powerful argument for the use of machine analysis is the accuracy with which the work is done.

Comparison With Other Findings

Some of the findings differ from those of the Florida study. Hines and Grobman[39] found that lack of a positive feeling toward the

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[39] Hines and Grobman, loc. cit.

school existed among parents of low economic and educational background. This Alberta study indicated the reverse; these groups showed a most favorable attitude toward the schools. The Alberta study agrees in two respects with the Denver study[40] which found no significant difference between the attitudes of parents and non-parents. It further found that almost half of the respondents wanted changes made in curriculum and teaching methods.

Needed Research

Explanations for many of the findings are not apparent. Several hypotheses which could be tested are:

1. What attitude will a representative and randomly selected sample yield for adult Albertans?
2. How reliable is the scale in measuring the attitude of those to whom it has been applied?
3. Do younger adults tend to be less critical of education than older persons?
4. Do English speaking groups hold relatively unfavorable attitudes and, if so, why?
5. Is there any evidence to show that unsigned questionnaires yield any more valid results than do signed questionnaires or personal interviews?

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[40] National Opinion Research Center, loc. cit.

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Adult Attitude Scale

on

The Alberta Educational System

Please note that this scale is designed to measure the general attitude of adult citizens of Alberta toward their educational system. The items are so arranged as to evoke favorable and unfavorable responses to the extent and degree which you desire. Your co-operation is greatly appreciated.

Instructions for Scales A and B

This scale consists of a number of statements. Preceding each statement is a series of letters which have the following meaning:

SA Strongly Agree
A Agree
U Undecided
D Disagree
SD Strongly Disagree

Please circle the letter or letters which best express your feeling toward each statement.

Example:

SA A U D SD What Canada needs is a strong dictatorship, secret police and all.

If you strongly disagreed with the statement you would circle SD. If you were in favor of a dictatorship, but would not like to see secret police, you would circle A, for "agree", rather than "strongly agree".

SCALE A

SA A U D SD 1. We have better schools now than anyone has ever had before.

SA A U D SD 2. I wish I could have gone further in school.

SA A U D SD 3. Our schools are to blame for most of our juvenile delinquency.

SCALE A (continued)

SA A U D SD 4. Schools should put more emphasis on the Three R's.

SA A U D SD 5. Teachers deserve more respect than they now receive.

SA A U D SD 6. There is no proper discipline in schools now.

SA A U D SD 7. A person needs an education to be a better citizen.

SA A U D SD 8. Teachers are sincerely concerned about their pupils' progress.

SA A U D SD 9. Far too much money is spent on equipment for shop or technical courses in our schools.

SA A U D SD 10. School discipline is a great asset to an individual throughout his life.

SA A U D SD 11. If I had to go to school again I should like to do so in some other province.

SA A U D SD 12. Teaching is an easy way of getting money for doing very little.

SA A U D SD 13. A man can learn more by working for three years than by going to high school.

SA A U D SD 14. Never before have we had such well-qualified teachers.

SA A U D SD 15. Students now are learning more than they did 25 years ago because there is less drill and more interesting work.

SA A U D SD 16. I am glad to see enough money being spent to equip school science labs adequately.

SA A U D SD 17. I could teach a lot of things better than the schools are doing.

SA A U D SD 18. It is not so much what you know but who you know.

SA A U D SD 19. Athletics are a very beneficial part of the school program.

SCALE A (continued)

SA A U D SD 20. Teachers are interested in children only because it is their job.

SA A U D SD 21. It is a waste of money to buy equipment such as typewriters for commercial classes.

SA A U D SD 22. It is worth the cost of counters, stoves and sewing machines to have good facilities for household economics courses.

SA A U D SD 23. Teachers' salaries are not too high.

SA A U D SD 24. Money intended for education should not be used for school athletic equipment.

SCALE B

SA A U D SD 1. The quality of teachers has fallen.

SA A U D SD 2. Every child needs as much education as he can get.

SA A U D SD 3. Schools are doing a good job of helping students to become happy, useful citizens.

SA A U D SD 4. Schools should offer more practical subjects.

SA A U D SD 5. I would rather pay to go to a private school of my own choice than pay taxes and attend a school under the provincial system of education.

SA A U D SD 7. A great deal too much is being spent for school athletic equipment.

SA A U D SD 8. We would have a better world if more people used common sense instead of the strange ideas they are taught in school.

SA A U D SD 9. School administration costs, such as salaries, are too high in Alberta.

SA A U D SD 10. The standard of education in Alberta is as good as it is anywhere.

SA A U D SD 11. If I could be a member of the Department of Education I'd sure change a few things in the curriculum.

SA A U D SD 12. The bus service which some schools provide to bring pupils from long distances is well worth what it costs.

SA A U D SD 13. Teachers are well trained for their work.

SA A U D SD 14. Average students are not given the encouragement and support they deserve.

SA A U D SD 15. Today's methods of discipline are excellent.

SA A U D SD 16. Teachers are not being paid as much as they are worth.

SA A U D SD 17. Getting an education wastes too much of a person's time.

SCALE B (continued)

SA A U D SD 18. Money spent for typewriters for commercial classes is money well invested.

SA A U D SD 19. Pupils would learn more if their teachers drilled them more thoroughly.

SA A U D SD 20. Dollar for dollar, schools are a waste of money.

SA A U D SD 21. The present system of education in Alberta fosters more efficient learning than before.

SA A U D SD 22. Some of our school buildings are much too costly. Less expensive buildings would be adequate.

SA A U D SD 23. Schools train children much better to get along in life now than they did twenty-five years ago.

SA A U D SD 24. Most teachers do their best to understand their pupils.

FORM I

AN ADULT ATTITUDE SCALE
ON
ALBERTA EDUCATION

INSTRUCTIONS

The scale consists of a number of statements. Following each statement is a series of letters which have the following meanings:

SA	Strongly Agree
A	Agree
U	Undecided
D	Disagree
SD	Strongly Disagree

Please circle the letter or letters which best express your feeling toward each statement.

Example: What Canada needs is a strong dictatorship. SA A U D SD

If you disagree with the statement you would circle the "D". If you violently oppose such a condition in Canada, you would then circle the "SD" letters.

1. In Alberta school children learn to treat each other fairly and kindly. SA A U D SD

2. Schooling helps a person to be a good citizen. SA A U D SD

3. I am glad to see more money being spent to equip school science laboratories. SA A U D SD

4. The schools of today give more support and encouragement to average students than they used to. SA A U D SD

5. Too much of a person's lifetime is spent in getting an education. SA A U D SD

6. I could teach my children better than the schools do. SA A U D SD

7. I would rather pay to have my child attend a good private school than a good public or separate school. SA A U D SD

FORM I (continued)

8. The variety of subjects taught in our schools today is better for the pupil than the former emphasis on only a few subjects. SA A U D SD

9. Discipline in most schools is too lax. SA A U D SD

10. Most good teachers are being underpaid. SA A U D SD

11. A real effort is being made in Alberta to increase the number of well-trained teachers. SA A U D SD

12. Progress in school depends not so much on what you know as who you know. SA A U D SD

13. The schools are trying to teach so many things that none are really done well. SA A U D SD

14. School costs are too high for the results achieved. SA A U D SD

15. The present system of education in Alberta promotes more efficient learning than ever before. SA A U D SD

16. Students of today are better informed than I was when I was going to school. SA A U D SD

17. The teaching methods of today are a real inspiration to pupils. SA A U D SD

18. The schools should offer more subjects of a practical nature. SA A U D SD

19. School administration costs (caretaking, secretarial work and so forth) are much too high. SA A U D SD

20. Every child in Alberta should have the opportunity to go to school. SA A U D SD

21. Teachers should drill their pupils more thoroughly. SA A U D SD

22. The play atmosphere of schools today does not develop perseverence. SA A U D SD

FORM I (continued)

23. Athletics are a very beneficial part of the school program. SA A U D SD

24. The initiative stimulated in schools of today benefit a person the rest of his life. SA A U D SD

25. For commercial courses in our high schools, we are spending too much on equipment, typewriters, special desks and paper. SA A U D SD

- Thank you for your cooperation -

FORM II

AN ADULT ATTITUDE SCALE
ON
ALBERTA EDUCATION

INSTRUCTIONS

The scale consists of a number of statements. Following each statement is a series of letters which have the following meanings:

SA Strongly Agree
A Agree
U Undecided
D Disagree
SD Strongly Disagree

Please circle the letter or letters which best express your feeling toward each statement.

Example: What Canada needs is a strong dictatorship. SA A U D SD

If you disagree with the statement you would circle the "D". If you violently oppose such a condition in Canada, you would then circle the "SD".

1. The schools under present conditions are teaching the things students should learn. SA A U D SD

2. On the whole the schools are doing a poor job. SA A U D SD

3. Money raised by taxes for school purposes should not be used for school athletic equipment. SA A U D SD

4. I am not satisfied with the schools in my own district. SA A U D SD

5. Schools should put more emphasis on arithmetic, spelling, reading, and writing. SA A U D SD

6. It is worth the cost of counters, stoves, and sewing machines to have good facilities for household economic courses. SA A U D SD

7. The quality of teachers is falling. SA A U D SD

FORM II (continued)

8. Teachers are sincerely concerned about their pupils' progress. SA A U D SD

9. Pupils have to spend too much time doing homework. SA A U D SD

10. The type of discipline in our schools is to blame for most of our juvenile delinquency. SA A U D SD

11. Some of our school buildings are unnecessarily elaborate and costly. SA A U D SD

12. School discipline helps an individual throughout his life. SA A U D SD

13. The bus service which some schools provide to bring pupils from long distances is well worth its cost. SA A U D SD

14. Many teachers are interested in pupils only as much as their job requires. SA A U D SD

15. Schools today tend to develop lazy students. SA A U D SD

16. The standard of education in Alberta is equal to that in any part of Canada. SA A U D SD

17. The idea of self-discipline now used in many of our schools is more effective than discipline through fear. SA A U D SD

18. Most teachers do their best to understand their pupils. SA A U D SD

19. Teachers deserve more respect from pupils than they now receive. SA A U D SD

20. Students are promoted with too little knowledge of their subjects. SA A U D SD

21. Teaching is an easy way of getting money for doing very little. SA A U D SD

22. Schools are doing a better job to help pupils to become happy, useful citizens than they did when I was at school. SA A U D SD

FORM II (continued)

23. Principals of large schools should receive a salary of at least $6,000 a year. SA A U D SD

24. Schools of today prepare children to cope with life better than they did when I was young. SA A U D SD

25. Pupils are not learning efficient work habits. SA A U D SD

26. The cost to Alberta pupils of pencils, notebooks, and textbooks is too high. SA A U D SD

- THANK YOU FOR YOUR COOPERATION -

FORM III

WHAT DO ALBERTANS THINK OF THEIR SCHOOLS?

This scale is designed to measure the attitudes of Albertans towards their schools.

By answering the questions you will help us to discover what our citizens think of their schools. Your answers are confidential and will not be read by anyone not connected with the investigation. The collective answers of citizens from every walk of life will give us a complete picture of public opinion toward education today which will be of value in planning for the future.

The study is sponsored by the Alberta Advisory Committee on Educational Research.

PLEASE COMPLETE THE PERSONAL DATA PART OF THE SCALE FIRST

. . . .

Name P. O. Address

Please use check marks ( ) for "Yes" in the following questions:

Male . . . . Female . . . . Parent . . . . Non-Parent . . . .

My Home is located in the following center of population:

10,000 or more . . . 5,000 to 10,000 . . . 500 to 5,000 . . . Rural . . .

Age: 20 to 34 years . . . 35 to 54 years . . . 55 or more years . . .

Religion: Protestant . . . . Roman Catholic . . . . Other . . . .

Native Language: English . . . . Ukrainian or Polish . . . .

French . . . . Other . . . .

Highest education taken in schools: Grade 9 or less . . . .

Grade 10, 11 or 12 . . . . Technical or Business College if taken after Grade 12 . . . . University Graduate . . . .

FORM III (continued)

Code Letter: . . . .

ALBERTA SCALE OF ADULT ATTITUDE TOWARD EDUCATION

Instructions

The scale consists of a number of statements. Following each statement is a series of letters which have the following meanings:

SA	Strongly Agree
A	Agree
U	Undecided
D	Disagree
SD	Strongly Disagree

Please circle the letter or letters which best express your feeling toward each statement.

Example: What Canada needs is a strong dictatorship. SA A U D SD

If you disagree with the statement you would circle the "D".

If you violently oppose such a condition in Canada, you would then circle the "SD" letters.

1. Schools of today prepare children to cope with life better than they did when I was young. SA A U D SD
2. The initiative stimulated in schools of today benefits a person the rest of his life. SA A U D SD
3. The quality of teachers if falling. SA A U D SD
4. A real effort is being made in Alberta to increase the number of well trained teachers. SA A U D SD
5. The play atmosphere of schools today does not develop perseverence. SA A U D SD
6. It is worth the cost of counters, stoves and sewing machines to have good facilities for household economics courses. SA A U D SD

FORM III (continued)

7. The idea of self-discipline now used in many of our schools today, is more effective than discipline through fear. SA A U D SD

8. School administration costs (caretaking, secretarial work and so forth) are much too high. SA A U D SD

9. Too much of a person's lifetime is spent getting an education. SA A U D SD

10. The schools under present conditions are teaching the things students should learn. SA A U D SD

11. Schools today tend to develop lazy students. SA A U D SD

12. Some of our school buildings are unnecessarily elaborate and costly. SA A U D SD

13. The type of discipline in our schools is to blame for most of our juvenile delinquency. SA A U D SD

14. Athletics are a very beneficial part of the school program. SA A U D SD

15. School costs are too high for the results achieved. SA A U D SD

16. I am glad to see more money being spent to equip school laboratories adequately. SA A U D SD

17. The standard of education in Alberta is equal to that in any part of Canada. SA A U D SD

18. I am not satisfied with the schools in my own district. SA A U D SD

19. The teaching methods of today are a real inspiration to pupils. SA A U D SD

20. The present system of education in Alberta promotes more efficient learning than ever before. SA A U D SD

21. I could teach my children better than the schools do. SA A U D SD

22. Discipline in most schools is too lax. SA A U D SD

FORM III (continued)

23. Students of today are better informed than I was when I was going to school.	SA A U D SD
24. The schools of today give more support and encouragement to average students than they used to do.	SA A U D SD
25. The variety of subjects taught in our schools today is better for the students than the former emphasis on only a few subjects.	SA A U D SD

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